

REMARKS

Claims 1-18 are currently pending in the above-identified patent application. Claims 1, 4, 5, 7, 10, 13, 14, and 16 have been amended, and claims 8 and 17 have been canceled. No new matter has been added by these changes, since support for the changes to claims 1 and 10 may be found in part in claims 4 and 7 and 13 and 16, respectively, as originally filed. Further, the amendments to the preambles of both claims 1 and 10, that is, that the module has been taken out of service, may be found on page 4, lines 2-15 of the subject Specification, as originally filed, wherein it is stated that: "Once the module is removed from its enclosure, the controller ceases to control that module, and no further information is provided to the EEPROM from the disk array module, or from other disk array modules in a data storage system. The locator apparatus of the present invention is a portable device adapted for use by a service technician, and includes a battery-pack, and low-power processor capable of reading drive status information from the EEPROM into a Serial-General Purpose Input-Output (GPIO). The GPIO is connected to individual drive indicators located on the locator apparatus in a numbered grid array that matches the disk drive positioning grid through a serial bus connection, such as a 12C serial bus connection, to the disk array module backplane connector. This permits the service technician to locate the failed disk. The serial bus has multiple power and ground connections for supplying power to an isolated fault diagnosis power plain which in turn supplies power to the Serial-EEPROM, the Serial-GPIO device(s) and the drive fault indicators. The GPIO can also drive a display that identifies the coordinates of the failed disk drive.".

The amendments to claims 5 and 14 were necessitated by the amendments to claims 1 and 10, respectively.

In the subject Office Action, claim 5 was objected to because claim 5 must depend from other than claim 5. Applicant wishes to thank the Examiner for having identified this obvious typographical error, and has amended claim 5 in accordance therewith. No new matter was added by this change.

Claims 1, 4, 6, 7, 10, 13, 15, and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,305,013 to Daniels in view of U.S. Patent No. 6,654,816 to Zaudtke et al., since referring to claim 1 and 10, the Examiner stated

that [Wong] Daniels discloses an apparatus for locating a failed disk drive in a plurality of disk drives on a removable disk array module having a backplane connector, comprising in combination: a host controller disposed on said disk array module for identifying a failed disk drive and for determining the location thereof on said disk array module (See lines 6-12 of Col. 3: "The processor 86 received information regarding the status of each of the disk drives 51 through 58 from the disk drive interface 82. The processor 86 writes information through a driver 88 to the LED's 41 through 48 to set the output of each of the LED's 41 through 48 depending on the status of their corresponding disk drives 51 through 58.").

The Examiner continued that although [Wong] Daniels does not disclose a non-volatile memory device disposed on said disk array module for receiving the location of the failed disk drive from said host controller, and for recording same; and a portable disk locator adapted for communicating with said non-volatile memory device, and for causing the location of the failed disk drive to be displayed. The Examiner stated that storing failure information for display on portable diagnostics is known in the art, and that an example of this is shown by Zaudtke et al., beginning on line 51 of Col. 3: "In yet further embodiments, a memory, such as implemented using non-volatile (NV) memory devices or the like, may be coupled to the microcontroller for storing the status information of the computer. The microcontroller may then store status information from the computer into its NV memory, or may further store information from the handheld device sent via the infrared transceiver. In yet another embodiment, the computer infrared transceiver, the microcontroller and the NV memory receive auxiliary power so that these devices are operational when the computer is powered down. In this manner, the microcontroller sends information from the NV memory to the handheld device even when the computer is powered down."). The Examiner then concluded that a person of ordinary skill in the art at the time of the invention would have been motivated to use a handheld device and non-volatile memory because, as disclosed by Zaudtke et al., "so that these devices are operational when the computer is powered down", and from the Abstract: "The handheld device effectively replaces external LCD health status hardware that typically consumes valuable space on the front bezel of the computer. The handheld device may further replace traditional input/output (I/O)

devices, such as a keyboard, a mouse, a monitor, a disk drive, etc. For example, the handheld device may be utilized to monitor and control boot up operations of the computer, such as displaying boot up information or otherwise executing setup or diagnostic routines.” Further, the Examiner asserted that Daniels discloses just such a situation described by Zaudtke et al., in the Abstract: “A graphical display icon on the front of a data storage unit provides status information on disk drives within the unit. The icon has a shape identical to that of the unit and includes a number of bicolor LED’s which each correspond to a similarly situated disk drive located in the unit. The color emitted by the LED’s communicate information on the status of the corresponding disk drive within the unit.”

Referring to claims 4, 7, 13, 16, Daniels in view of Zaudtke et al. discloses said portable disk locator device comprises a power supply for providing electrical energy to the components thereof (From the Abstract of Zaudtke et al.: “Auxiliary power may enable handheld communications when the computer is shut down.”), a processor for reading said non-volatile memory device and indicator devices disposed in a configuration similar to that of said disk drives on said disk array module, such that the location of a failed disk drive is displayed by activation of said indicator device corresponding to that disk drive (See, Daniels beginning on line 6 of Col. 3, “The processor 86 receives information regarding the status of each of the disk drives 51 through 58 from the disk drive interface 82. The processor 86 writes information through a driver 88 to the LED’s 41 through 48 to set the output of each of the LED’s 41 through 48 depending on the status of their corresponding disk drives 51 through 58.” Zaudtke et al., beginning on line 51 of Col. 3: “In yet further embodiments, a memory, such as implemented using non-volatile (NV) memory devices or the like, may be coupled to the microcontroller for storing the status information of the computer. The microcontroller may then store status information from the computer into its NV memory, or may further store information from the handheld device sent via the infrared transceiver. In yet another embodiment, the computer infrared transceiver, the microcontroller and the NV memory receive auxiliary power so that these devices are operational when the computer is powered down. In this manner, the microcontroller sends information from the NV memory to the handheld device even when the computer

is powered down." In the Abstract of Zaudtke et al., it is stated that: "The handheld device effectively replaces external LCD health status hardware that typically consumes valuable space on the front bezel of the computer.").

Referring to claims 6 and 15, the Examiner stated that Daniels in view of Zaudtke et al. discloses that said disk array module comprises a plurality of indicator devices adapted to be activated by said portable disk locator, at least one indicator device of said plurality of indicator devices being disposed in the vicinity of each of said disk drives (See, for example, FIG. 1 of Zaudtke et al., wherein the handheld device is "in the vicinity".).

Claims 5, 8, 14, 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over US 5305013 to Daniels in view of US6654816 to Zaudtke et al. as applied to claims 4, 7, 13, 16 above, since referring to claim 5, 8, 14, 17, the Examiner stated that Daniels in view of Zaudtke et al. discloses said power supply comprises a power supply (From line 55 of Col. 2, "The handheld device may be any type of portable device including a corresponding serial or infrared communication port, such as a palm PC (PPC) a personal digital assistant (PDA), a notebook computer, etc."). The Examiner continued that although Daniels in view of Zaudtke et al. does not specifically disclose that the handheld device, in any of its forms must be powered by a battery, that this is very well known in the art, and that a person of ordinary skill in the art at the time of the invention would have been motivated to use a battery to power a handheld device because it allows it to be portable and not tethered to a power source such as a wall socket.

Applicants respectfully disagree with the Examiner concerning the rejection of claims 1, 4, 6, 7, 10, 13, 15, 16, under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,305,013 to Daniels in view of U.S. Patent No. 6,654,816 to Zaudtke et al., for the reasons to be set forth hereinbelow.

Claims 2 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels in view of Zaudtke et al. as applied to claims 1 and 10 above, and further in view of U.S. Patent No. 5,367,647 to Coulson et al., and claims 3, 9, 12, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels in view of Zaudtke et al. as applied to claims 1 and 10 above, and further in view of U.S. Patent No.

5,864,659 to Kini. Since applicant believes that claims 1 and 10, as amended, are patentable over Daniels in view of Zaudtke et al. for the reasons to be set forth hereinbelow, applicant believes that no further response is required relative to these dependent claims.

The Examiner concluded the subject Office Action with the statement: "Applicant's lack of response regarding priority is interpreted as denying any such benefit of priority." Applicant respectfully does not understand the meaning of this conclusory statement by the Examiner.

Turning now to the rejection of claims 1, 4, 6, 7, 10, 13, 15, and 16, under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,305,013 to Daniels in view of U.S. Patent No. 6,654,816 to Zaudtke et al., in Col. 1, lines 48-58 of Daniels it is stated that: "The present invention comprises a graphical display or icon situated on the front of a computer system or data storage unit having a plurality of disk drives. The shape of the icon resembles an outline of the unit and includes bicolor light emitting diodes (LED's) at locations corresponding to disk drive locations inside the unit. Each of the LED's have a one-to-one correspondence with the respective disk drive situated in the corresponding location inside the unit, and the bicolor LED's emit certain colors which reflect the current status of their corresponding disk drives." Moreover, Col. 3, lines 40-42 of Daniels states: "The operator simply looks at the icon for an active or error indication and the indicated drive is in that same relative position in the unit." Clearly, Daniels teaches that the data storage unit is on-line when the LED's are observed. Thus, Daniels teaches away from the recitations of subject claims 1 and 10 which recite that the module is in an out of service condition.

Further, Zaudtke et al. in Col. 3, lines 57-63, states: "In yet another embodiment, the computer infrared transceiver, the microcontroller and the NV memory receive auxiliary power so that these devices are operational when the computer is powered down. In this manner, the microcontroller sends information from the NV memory to the handheld device even when the computer is powered down." Clearly the handheld infrared transceiver of Zaudtke et al. cannot supply power to operate the microcontroller for transmitting information from the NV memory thereto, since the handheld device is remote therefrom. Thus, Zaudtke et al. does not teach that a technician may use the

handheld device to review information stored on the NV memory using power provided from the handheld device, as recited in subject claims 1 and 10. Rather, Zaudtke et al. teaches away from subject claims 1 and 10 by requiring that power to the NV memory and the microcontroller be supplied by other than the handheld device.

Since the Examiner has combined two references each of which teaches away from independent claims 1 and 10, applicant respectfully believes that the Examiner has failed to make a proper *prima facie* case for obviousness as is required for a rejection under 35 U.S.C. 103(a). Further, dependent claims 2-7 and 9, and 11-16 and 18 which depend from independent claims 1 and 10 are therefore patentable.

In view of the discussion presented hereinabove, applicant believes that subject claims 1-7, 9-16 and 18, as amended, are in condition for allowance and such action by the Examiner at an early date is earnestly solicited.

Reexamination and reconsideration are respectfully requested.

Respectfully submitted,

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